

WHAT IS CLAIMED IS:

1. A fluid delivery system comprising:

a first reservoir having a first volume;

a second reservoir having a second volume and connected to

5 *Sub a* said first reservoir;

a pump device operatively connected to said first reservoir
and said second reservoir;

10 a heating device in thermal communication with said first
reservoir and in substantial thermal isolation from said second
reservoir; and

a delivery device connected to said first reservoir,

15 wherein said pump device selectively causes fluid to flow
from said second reservoir to said first reservoir, from said
first reservoir to said delivery device and from said delivery
device to the atmosphere.

Subs 2. The fluid delivery system of claim 1, wherein said first
volume is substantially smaller than said second volume.

20 3. The fluid delivery system of claim 1, wherein said delivery
device comprises a downwardly directed spout.

Sub B
4. The fluid delivery system of claim 2, wherein said fluid is dispensed at a temperature between about 30° C to about 60° C.

5 5. The fluid delivery system of claim 2, wherein said first reservoir is a coiled tube.

6. The fluid delivery system of claim 2, wherein said pump device is manual.

7. The fluid delivery system of claim 2, wherein said pump device is electric.

8. The fluid delivery system of claim 2, further comprising an electrical component that controls said heating device, wherein said electrical component is in fluid isolation from said first reservoir and said second reservoir.

9. The fluid delivery system of claim 2, further comprising a thermostat that controls said heating device, wherein said

10. The fluid delivery system of claim 5, wherein said coiled
5 tube is flat.

11. The fluid delivery system of claim 5, wherein said coiled tube is made of aluminum.

10 12. The fluid delivery system of claim 8, wherein said
11 electrical component is in substantial thermal isolation from
12 said heating device and said first reservoir.

13. The fluid delivery system of claim 10, wherein said coiled
15 tube is wound about five times.

14. The fluid delivery system of claim 12, wherein said electrical component has a manual power control switch.

20 15. The fluid delivery system of claim 12, wherein said
electrical component has an automatic power shut off switch.

Sub 1
16. The fluid delivery system of claim 15, wherein said automatic shut off switch triggers after a period of time has elapsed.

5

17. A fluid delivery system comprising:

a first reservoir having a first volume;

Sub 2
a second reservoir having a second volume and connected to said first reservoir;

10 a pump device operatively connected to said first reservoir and said second reservoir;

a heating device in thermal communication with said first reservoir and in substantial thermal isolation from said second reservoir; and

15 a delivery device connected to said first reservoir;

wherein said pump device selectively causes fluid to flow from said second reservoir to said first reservoir, from said first reservoir to said delivery device and from said delivery device to the atmosphere; and said second reservoir is removable
20 from said fluid delivery system.

5

10

15

20

24. The fluid delivery system of claim 23, wherein said delivery device comprises a downwardly directed spout.

25. The fluid delivery system of claim 18, further comprising a thermostat that controls said heating device, wherein said thermostat is in fluid isolation from said first reservoir and said second reservoir.

5

26. The fluid delivery system of claim 18, further comprising an electrical component that controls said heating device, wherein said electrical component is in fluid isolation from said first reservoir and said second reservoir.

27. The fluid delivery system of claim 26, wherein said electrical component is in substantial thermal isolation from said heating device and said first reservoir.

28. The fluid delivery system of claim 26, wherein said electrical component has a manual power control switch.

29. The fluid delivery system of claim 26, wherein said electrical component comprises an automatic power shut off switch.

20

Sub B/ 30. The fluid delivery system of claim 29, wherein said automatic shut off switch triggers after a period of time has elapsed.

5 31. The fluid delivery system of claim 17, wherein said pump device is electric.

32. The fluid delivery system of claim 18, wherein said fluid is dispensed at a temperature between about 30° C to about 60° C.

33. A fluid delivery system comprising:

a first reservoir having a first volume;

a second reservoir having a second volume and connected to

15 said first reservoir;

a pump device operatively connected to said first reservoir and said second reservoir; and

a heating device in thermal communication with said first reservoir and in substantial thermal isolation from said second

20 reservoir,

Sub
a3
cont 7

wherein said pump device selectively causes fluid to flow from said second reservoir to said first reservoir and from said first reservoir to the atmosphere; and said first reservoir comprises a heat sink.

5

Sub B1

34. The fluid delivery system of claim 33, wherein said first volume is substantially smaller than said second volume.

10
11
12
13
14
15

35. The fluid delivery system of claim 33, wherein said heat sink has a shape selected from the group consisting essentially of cubical, rectangular, triangular, and cylindrical shapes.

36. The fluid delivery system of claim 33, wherein said heating device comprises a heating wire in contact with said heat sink.

37. The fluid delivery system of claim 36, wherein said heat sink has channels formed therein for housing at least a portion of said heating wire.

20

38. The fluid delivery system of claim 33, wherein said heat sink is made of aluminum.

Sub B1

39. The fluid delivery system of claim 33, wherein said pump device is manual.

5 40. The fluid delivery system of claim 33, wherein said pump device is electric.

10 41. The fluid delivery system of claim 33, further comprising a thermostat that controls said heating device, wherein said thermostat is in fluid isolation from said first reservoir and said second reservoir.

15 42. The fluid delivery system of claim 33, further comprising an electrical component that controls said heating device, wherein said electrical component is in fluid isolation from said first reservoir and said second reservoir.

20 43. The fluid delivery system of claim 42, wherein said electrical component is in substantial thermal isolation from said heating device and said first reservoir.

Sub P1 44. The fluid delivery/system of claim 43, wherein said electrical component has a manual power control switch.

45. The fluid delivery system of claim 43, wherein said
5 electrical component has an automatic power shut off switch.

46. The fluid delivery system of claim 45, wherein said automatic shut off switch triggers after a period of time has elapsed.

47. The fluid delivery system of claim 33, wherein said second reservoir is removable from said fluid delivery system.

48. The fluid delivery system of claim 33, wherein said fluid
15 is dispensed at a temperature between about 30° C to about 60° C.

Suby
at 49. A fluid delivery system comprising:

a first reservoir having a first volume;

20 a second reservoir having a second volume and connected to said first reservoir;

a pump operatively connected to said first reservoir and said second reservoir;

Sub
a heating device in thermal communication with said first reservoir and in substantial thermal isolation from said second
5 reservoir; and

a housing surrounding said first reservoir and said heating device, and forming a substantially water tight seal around said first reservoir and said heating device,

wherein said pump selectively causes a fluid to flow from
10 said second reservoir to said first reservoir and from said first reservoir.

Sub
50. The fluid delivery system of claim 49, wherein said second reservoir is removable from the fluid delivery system.

51. The fluid delivery system of claim 49, wherein said first volume is substantially smaller than said second volume.

52. The fluid delivery system of claim 49, wherein said first
20 reservoir comprises a heat sink.

SUB B1

53. The fluid delivery system of claim 52, wherein said heat sink has a shape selected from the group consisting essentially of cubical, rectangular, triangular, and cylindrical shapes.

5 54. The fluid delivery system of claim 52, wherein said heating device comprises a heating wire in contact with said heat sink.

55. The fluid delivery system of claim 54, wherein said heat sink has channels formed therein for housing at least a portion of said heating wire.

56. The fluid delivery system of claim 52, wherein said heat sink is made of aluminum.

15 57. The fluid delivery system of claim 49, wherein said pump is manual.

58. The fluid delivery system of claim 49, wherein said pump is electric.

20

sub B 59. The fluid delivery system of claim 49, further comprising a thermostat that controls said heating device, wherein said thermostat is in fluid isolation from said first reservoir and said second reservoir.

5

60. The fluid delivery system of claim 49, further comprising an electrical component that controls said heating device, wherein said electrical component is in fluid isolation from said first reservoir and said second reservoir.

10 61. The fluid delivery system of claim 60, wherein said electrical component is in substantial thermal isolation from said heating device and said first reservoir.

15 62. The fluid delivery system of claim 60, wherein said electrical component has a manual power control switch.

63. The fluid delivery system of claim 60, wherein said electrical component has an automatic power shut off switch.

20

Sub A1

64. The fluid delivery system of claim 63, wherein said automatic shut off switch triggers after a period of time has elapsed.

5 65. The fluid delivery system of claim 49, wherein said fluid exits said first reservoir at a temperature between about 30° C to about 60° C.

10 66. A method of heating fluid in a fluid delivery system having a first reservoir, a second reservoir, and a heating device, said first reservoir being in thermal communication with said heating device and said second reservoir being in substantial thermal isolation from said heating device, comprising the steps of:

15 commencing a heat up cycle by:

providing full power to the heating device;

determining the fluid temperature in the first reservoir; and

determining if said fluid temperature is at or above a first temperature;

20

commencing an overshoot protection cycle when said fluid temperature is at or above said first temperature by:

providing reduced power to said heating device;

determining said fluid temperature in said first reservoir; and

determining if said fluid temperature is at or above a second temperature; and

5 commencing a maintenance cycle when said fluid temperature is at or above said second temperature by:

shutting off power to said heating device;

determining said fluid temperature in said first reservoir;

10 determining if said fluid temperature is at or below a third temperature;

providing reduced power to said heating device when said fluid temperature is at or below said third temperature;

15 determining said fluid temperature in said first reservoir;

determining if said fluid temperature is at or above said second temperature; and

repeating said maintenance cycle steps when said fluid temperature is at or above said second temperature.

20

67. The method of claim 66, further comprising the steps of:

measuring the time said heating device has been activated after said maintenance cycle has commenced;

determining if said time is at or above a time limit; and

automatically shutting off said power when said time is at
5 or above said time limit.

68. The method of claim 66, wherein said first temperature is pre-determined.

10 69. The method of claim 66, wherein said first temperature is about 5° C to about 15° C less than said second temperature.

15 70. The method of claim 66, wherein said third temperature is pre-determined.

71. The method of claim 66, wherein said third temperature is about 0.5° C to about 10.0° C less than said second temperature.

20 72. The method of claim 66, wherein said reduced power is about half of said full power.

Subs 73. The method of claim 67, wherein said time limit is pre-determined.

74. The method of claim 67, wherein said time limit is about
5 one hour.

090901Z FEB 68